Checking Out the Options

Whitetail deer can reproduce rapidly. An overpopulation of deer may result in:

- damage to the environment, particularly sensitive areas
- competition with other herbivores for limited food
- increases in deer/vehicle accidents
- significant increases in crop damage
- more cases of winter starvation

Under natural conditions, most animals produce more young each year than their habitat can support. Unless something is done to increase the carrying capacity of the habitat, the same number that are added must die. This yearly surplus that must die could be old, sick, injured, or young animals. It could also include animals in prime condition. Deer populations can be kept under control only by eliminating the annual increase.

But how will those animals be eliminated? That is the big question. Most people agree that the deer herd must be managed. In this activity, your students will explore the advantages and disadvantages of deer management options.

1. Review the concepts of reproductive potential and carrying capacity.
2. Brainstorm ways that the deer population could be managed. Because this is a brainstorming session, record all options which your students list. As a class, you will decide which ones are worth investigating.
3. Take a second look at your list. Cross off any options which are obviously not practical. If your students have not listed the following options, add them to the list at this time. These options are the ones most commonly identified as possible solutions. Information on them has been provided for you.

- Allow nature to take its course - do nothing
- Establish a regulated hunting season
- Control deer herds with sharpshooters
- Trap and euthanize deer
- Trap and transfer excess deer to other areas
- Introduce large predators
- Use fencing to restrict deer movements
- Use repellents to control damage
- Implement supplemental feeding programs
- Use contraceptives (implants & infertility drugs)
- Sterilize deer (tubal ligations & vasectomies)

Lesson 13

Investigate the options which are available for managing the Wisconsin deer herd

Time:

1/2 class period
1 homework assignment
1 class period

Materials:

- copies of *Checking Out the Options* worksheet for each student or group of students

Objectives:

Investigate the options available for maintaining the deer herd at healthy levels

Analyze the options in terms of local conditions

Subjects:

Ecology
Environmental Science
Vocational Agriculture
Life Science
Economics
Government

4. Assign groups of students to investigate each option which they have identified. Instruct them to use the *Checking Out the Options* recording sheet.
5. Invite groups to share what they have discovered about the various options. Which ones would control the growth of the population? Which might actually increase the population? Which ones seem economically feasible?

Work together to determine the best solution for deer population problems. Which option(s) would your class recommend for a wilderness area? An urban area? An agricultural area? A forest? A nature preserve?

Assessments

Evaluate student investigation into management options by the quality of research, the relevance and accuracy of information, and their ability to share what they have learned with the class.

After classroom discussion, ask students to play the role of wildlife managers in the following situation: A subdivision surrounded by small farms is rapidly growing. Homeowners in the development express concerns about deer damage to landscaping around their homes. Hunting is illegal in the subdivision and many surrounding farmers do not allow hunters on their land. As the wildlife manager for this area, what strategies will you use to manage the deer herd? Students should prepare written or oral recommendations of how they would manage the herd.

Extension

Go WILD!

The **Project WILD** activity "Checks and Balances" allows students to try their hand at managing an imaginary herd. Students begin with herds of 100 animals. Their goal is to maintain a healthy population for nine years. Reproduction, weather conditions, predation, management, and other factors affecting the herd size are represented by condition cards. Students roll dice to determine their influences on the deer. The activity is only a simulation. It recognizes the fact that population dynamics and management decisions are much more complex than can be represented through this type of activity.

Management Option _____

Brief Description

Advantages

Disadvantages

Cost estimate

Do you support this option?
(If you would only support this option under certain circumstances, please explain.)

Management Option Do nothing

Brief Description

Allow nature to take its course. Do nothing to discourage or encourage the growth of the deer herd.

Advantages

After an initial increase in population, the number of deer would level off.
This option is considered a natural solution to the problem of deer management.
We could blame nature for our problems.

Disadvantages

The initial increase in the herd could cause severe habitat destruction resulting in serious damage to the environment. It could have negative impacts on plant and animal species.
The future carrying capacity of the land could be reduced.
The deer may not be healthy. They could be very susceptible to severe winters due to starvation and disease.
More deer would probably mean more car-deer accidents and more crop damage.

Cost estimate

The cost of doing nothing would be nothing! However, the larger number of deer would significantly increase crop damage and deer-vehicle collisions. Motorists would probably have to pay larger auto insurance premiums. Farmers would face higher losses from deer damage.

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Establish a regulated hunting season

Brief Description

Deer are shot with bow, gun, or muzzleloader during a defined season. The number of antlerless deer hunted can be regulated by issuing special permits.

Advantages

Hunting reduces the deer population.

Hunting provides recreation and nutritious food for many individuals and families on an annual basis. It also provides public access to a public resource while reducing deer numbers.

Landowners can lease their land for hunting and recover some of their losses from deer damage.

A regulated hunting season does not increase local taxes.

Tourist-related businesses located in good deer hunting country benefit from increased business.

Disadvantages

Some people are opposed to killing in any form.

Hunting (especially firearm) is not permitted in most metro areas.

Private landowners may choose to harvest only the amount of deer they want or to close their lands to all hunting.

Hunting seasons limit the window of time during which deer can be removed. Changes in the season are made through legislative processes.

Some hunters trespass, leave gates open, litter, or otherwise disturb or damage the private property of landowners.

Cost estimate

The average hunter spends $350 per season.

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Hire sharpshooters

Brief Description

Qualified sharpshooters fire from elevated blinds located over baited shooting sites. They use rifles to shoot the deer.

Advantages

Sharpshooting does reduce the population.
This method has been approved by the American Veternary Medical Association as a humane method of euthanasia.
Sharpshooters can be screened and field tested before hiring.
Baiting sites and tree stands can be positioned and monitored during the shooting process to prevent accidental injury to people.
Meat from deer can be donated to food pantries and shelters.

Disadvantages

Some people are opposed to killing of any kind.
The annual increase in the herd must be removed each year.
Some landowners, with high deer populations, are opposed to the use of guns.

Cost estimate

$286 per deer

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Trap and euthanize

Brief Description

Box traps are used to capture deer. The deer are killed in the trap with a small caliber rifle at close range. When using rocket nets, a penetrating captive bolt (the same device used in slaughter houses) is used to kill the deer.

Advantages

This method does reduce the deer population.

The use of a penetrating bolt has been deemed humane by the American Veterinary Medical Association Panel on Euthanasia.

Venison from deer can be donated to feed hungry people.

Disadvantages

This method must be repeated on an annual basis to remove deer which are added to the population.

Trapping requires a large time commitment and expensive supplies.

Many people are opposed to killing in any form. In addition, capture techniques traumatize animals and raise concerns about humaneness.

Trapping and euthanizing increases local taxes in the communities which choose this option.

Private landowners which don't want to practice this option will see increased deer populations on their lands.

Cost estimate

$218 per deer for rocket netting. It is less expensive than trapping and relocating since the deer are not transported.

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Trap and relocate

Brief Description

Traps (e.g., rocket nets and drop-door box traps) or tranquilizer guns are used to capture deer. In Wisconsin, deer can only be relocated to deer farms.

Advantages

This method does temporarily reduce the existing local deer herd.

Trapping and relocating reduces the population and consequently decreases deer/vehicle collisions and deer damage within the trapping area.

Disadvantages

To maintain a population at goal, deer must be removed every year. Neighboring deer often move in if the habitat is good.

The survival of trapped and released deer is not good. Some die from traumatic injury during handling; others die soon after release.

Trapping and relocating requires a large time and monetary commitment for each deer moved.

Releasing deer on deer farms is a concern of animal rights activitists because the deer are hunted there.

Trapping and relocating deer increases the local taxes in the community.

Cost estimate

$400 per deer

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Introduce predators

Brief Description

Wolves and/or mountain lions (cougars) are introduced into areas for control of deer populations.

Advantages

Introducing predators is considered a natural way to control populations.

Predators can provide a certain level of deer population control in remote wilderness areas.

Disadvantages

Predators tend to stabilize prey populations at relatively high densities.

Most deer habitat in Wisconsin is highly populated by people. Large predators require large, undisturbed areas to survive and thrive.

Predators introduced to control deer populations might also feed on livestock.

Private landowners may not want predators introduced on their land.

Someone will have to pay for introduction either through increased taxes or hunting licenses.

Cost estimate

The current wolf population in Wisconsin is about 80. It costs about $100,000 annually to monitor the health and distribution of our timber wolf populations. In one year, 80 wolves could eat about 1600 deer.

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Control damage - fences

Brief Description

Fences are installed to exclude deer from an area. Electric fences provide temporary protection. Woven-wire fences are more permanent.

Advantages

Fences are non-lethal and considered a humane way to control deer damage problems.

Fences are a cost-effective way to protect expensive plants in a small area.

Disadvantages

This option does not reduce the size of the deer herd.

Deer restricted from one area are likely to cause problems in surrounding areas.

Fences are expensive and require regular maintenance. Commercial growers pass this cost on to consumers by raising the prices of their products.

Electric fences may not be appropriate for use in highly populated areas.

Deer are sometimes trapped, injured, or killed when jumping fences.

Cost estimate

Temporary electric fences cost about $.10 per linear foot.

Woven-wire fences cost from $2 to $4 per linear foot.

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Control damage - repellents

Brief Description

Repellents (natural items or chemicals) are used to keep deer away from plants. Contact repellents are applied directly to plants; their taste repels deer. Area repellents are applied near plants; they repel deer by odor.

Advantages

Repellents are non-lethal and considered a humane way to control deer damage problems.

Repellents can provide short term protection for valuable plants in orchards, gardens, and home landscaping.

Disadvantages

Repellents do not reduce the size of the deer herd.

Repellents require frequent applications and are not as effective in cold weather.

When deer are repelled from one area, they tend to move to other areas and cause problems. Adjacent landowners who do not use repellents will see increases in deer populations.

Repellents seem to decrease in effectiveness as deer densities increase and deer food becomes scarce.

The expense of using repellents is passed on to consumers through higher prices for products.

Cost estimate

Not counting labor, the cost of repellents ranges from nothing for human hair to $50 per acre for one application of a chemical repellent. An average cost of $70 per acre per year should be expected.

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Implement a supplemental feeding program

Brief Description

Food in the form of concentrated pellets and/or grains is provided for deer in areas where natural foods are in short supply or in areas where deer are damaging crops or landscaping.

Advantages

Providing food is considered a humane approach to addressing deer population problems.

This method can reduce winter deer mortality of individual deer if implemented before the deer are in poor health.

Disadvantages

This method doesn't reduce the population and fails to address the cause of overpopulation.

This method artificially raises the biological carrying capacity of the land. It encourages population growth, multiplying the problem in future years.

The concentration of deer at a feeding site concentrates other problems as well (e.g., deer are more likely to injure each other competing for food, car-deer accidents increase, and plants in the area are often damaged).

If private donations are not available, communities choosing to feed deer must increase local taxes.

Cost estimate

$37 - $53 per deer for a typical winter

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Use contraceptives

Brief Description

Contraceptives include steroid implants and immuno-contraceptive vaccines. Vaccines can be administered with darts. Steroid implants require capture of deer.

Advantages

This method is considered a humane approach to deer population management by some people.

Contraceptives significantly reduce an individual deer's productivity. Used correctly, they do decrease the population growth rate of captive or isolated populations.

Remote delivery with darts does not require capture or handling of deer.

Disadvantages

Some people believe the use of wild animal contraceptives is "playing with nature" and not acceptable.

Contraceptives have not successfully controlled wild deer populations. In addition, none are approved by the EPA, FDA, or USDA for use on deer.

Regular treatments are required making treatment of wild deer difficult and expensive (e.g., a vaccine is effective for 100 - 150 days).

A large number of deer (at least 78% of females) must be treated to have an effect on population growth rate.

The long-term health effects of contraceptives on deer or their predators are unknown. This includes the affect on people.

Cost estimate

$100 per deer for darted hormone shot

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)

Management Option Sterilize deer

Brief Description

Deer are surgically sterilized through vasectomies or tubal ligations.

Advantages

Sterilization is considered a humane method of population control by some people.

Sterilized deer are unable to reproduce, thus slowing the growth of the population.

If done properly, this method can slow the growth of an isolated population.

Disadvantages

Some people feel that sterilizing wild animals is "playing with nature" and is not acceptable.

Sterilization has not successfully controlled populations of wild deer. (Note: Milwaukee County Zoo has effectively used this method for 7 years.)

Most of the females in the area must be sterilized to slow the growth of the herd.

Tubal ligations on females cannot be performed in the field. Capture and handling is stressful to the deer.

Every year, new females in the area must be sterilized prior to breeding.

The expense of sterilization causes increased taxes in the community where it is used.

Cost estimate

$66 per deer for vasectomy, $136 per deer for tubal ligation. These costs do not include the costs for darting and/or trapping the deer. It also does not include the initial purchase of surgical equipment.

Do you support this option?

(If you would only support this option under certain circumstances, please explain.)